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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Boqueron Field Office
P.O. Box 491
Boqueron, Puerto Rico 00622
July 11, 2003

Mr. Chris Penny
Remedial Project Manager
Atlantic Division, (LANTDIV) Code EV32
Naval Facilities Engineering Command
1510 Gilbert St.
Norfolk, Virginia 23511-2699

Re: Draft Remedial Investigation/Feasibility Study For Solid Waste Management Unit (SWMU) 6, SWMU 7, and Area of Concern (AOC) H and AOC J, Former US Naval Ammunition Support Detachment, Vieques Island, Puerto Rico

Dear Mr. Penny:

Our office has reviewed the above mentioned document. The Navy is proposing to conduct a Remedial Investigation (RI) and Feasibility Study (FS) on four sites within the former Naval Ammunition Support Detachment (NASD). Two of these sites, Solid Waste Management Unit (SWMU) 6 Mangrove Disposal Site and Area of Concern (AOC)J Former Staging Area, are located within the Department of the Interior lands that form the Vieques National Wildlife Refuge. The other two sites, SWMU 7 Former Quebrada Site and AOC H Former Power Plant, are on lands transferred to the Municipality of Vieques.

All of the sites, including the lower portion of SWMU 7, are located in coastal estuarine environments. SWMU 6 is located adjacent to Kiani Lagoon, in a intermittently flooded black mangrove wetland. The rest of the sites are adjacent to intermittent streams (quebradas) or ditches that are brackish, usually vegetated with mangroves, and open to the sea during heavy rains.

Section 2.3 Previous Investigations

Section 2.3.1, SWMU 6 Mangrove Disposal Site: The Fish and Wildlife Study entitled, "Contaminant Levels in Crabs from Two Solid Waste Management Units on Vieques National Wildlife Refuge" (Lopez, 2002) was not cited. Copies of the report along with the analytical data were furnished to the Navy and its contractors. Tissue samples of crabs were specifically taken from SWMU 6 (see enclosed map) to determine if there were any potential pathways of contaminants into wildlife resources. Crab tissue samples from SWMU 6 indicated the presence of DDT, DDE, lead and cadmium.

Section 3 Initial Evaluation and Conceptual Site Models

Section 3.1, Screening Criteria: Drinking water criteria are being used to assess ground water in SWMU 6, 7, and AOC H & J. The water in these areas is brackish and will automatically exceed several of the drinking water criteria. More relevant criteria should be used. Screening criteria should include the EPA's Chronic Marine Ambient Water Quality Standards, Puerto Rico Environmental Quality Board's Coastal and Estuarine Water Quality Standards, or any other more appropriate screening criteria.

Section 3.2, Conceptual Site Model: The conceptual site model for all the sites should include a groundwater dermal contact risk for aquatic organisms (crabs). Land crabs although mostly terrestrial, do need to keep their gills moist. Their burrows intercept the ground water so they can retreat into an aquatic environment free of predators. Thus land crabs can come in direct contact with contaminated ground water and bioaccumulate contaminants found therein.

The conceptual site model for AOC J should include aquatic ecological receptors for surface water and sediments since it is adjacent to a quebrada and wetland area.

Section 4 RI Technical Approach and Investigation Procedures

Section 4.3.1.5, SWMU 6 Sediment Sampling and Analysis: The location of the two background sample points are not shown and should be indicated on a site map. We noted that only metals are being analyzed and recommend that sediment samples should include the same parameters as analyzed in soils and therefore, should include pesticides, PCB's, SVOC's, explosives and perchlorate. Lagoon and wetland sediments are usually anaerobic in nature and organic contaminants tend to linger in them longer because their breakdown can be slower in an anaerobic environment.

Section 4.3.2, SWMU 7 Quebrada Disposal Site: This site is located in a steep ravine formed by an intermittent creek. While Vieques does not have any permanently flowing streams this site and all the quebradas on the island terminate in an estuarine wetland at their discharge points to the sea. The quebrada associated with SWMU 7 originates in the nearby hills and flows north. It crosses Road 200 via culverts before reaching the sea. The current site boundary ends south of the Road 200 culverts. Only one surface soil sample is being proposed north of the culvert. The location of SWMU 7 is along a steep ravine, which should indicate that the contaminants, if any, have likely been moved off site and deposited in the estuarine wetland areas near the beach. We recommend that the site boundary include the entire length of the quebrada from the known area of waste to the sea. Sediment samples should be taken north of the Road 200 culverts in the wetland areas to determine if contaminant migration has occurred. Sampling parameters for the lower SWMU 7 should include metals, pesticides, and PCB's.

Section 4.3.3.5, AOC H Former Power Plant: Sediment sample parameters should include metals and pesticides. Since the site is adjacent to a natural drainage, surface runoff would probably carry contaminants into the drainage.

Section 4.3.4.3, AOC J: Surface and Subsurface Soil Sampling: Sampling parameters should include pesticides as well. The Expanded Preliminary Assessment/Site Investigation (PA/SI) shows that residential and industrial preliminary remediation goals (PRGs) were used to screen for soil. This may not be protective of wildlife: the residential/industrial PRGs need to be compared to ecologically-based PRGs to verify their protectiveness.

Section 4.3.4.5, AOC J: Sediment Sampling: Pesticide parameters should also be included in the additional sediment samples to be taken.

Section 5 Human Health and Ecological Risk Assessment

Both Navy Guidance on Conducting Ecological Risk Assessment and the June 2000 EPA Region IV Guidance on Ecological Risk Assessment stress a tiered approach. However the EPA guidance stresses that the first five steps should occur prior to the Remedial Investigation phase to avoid problems with the rest of the process. It also stresses communications with the stakeholders early in the process. After the expanded PA/SI was published in 2002, the Service asked about conducting an Ecological Risk Assessment, which would have been an appropriate time to begin the tiered process and discussions. We suggest this timing be kept in mind in the future.

The Service carried out an initial sampling of crabs at SWMU 6 and published a report in 2002. Data show that pesticide and metal levels are higher in crabs from SWMU 6 than crabs sampled at Sandy Point, St. Croix, or Laguna Boca Quebrada, Vieques. This indicates a complete exposure pathway to an ecological receptor at SWMU 6.

The EPA Risk Assessment Guidance does not provide any specifics regarding the sampling matrices to be sampled. It does say that ERA tiered approach should start as soon as some data is available from the site. All the sites are located in or adjacent to wetland areas which are habitat for land crabs and fiddler crabs. These organisms are used by other wildlife as prey items, and, in the case of land crabs, as a food item by humans. We believe that both biotic and abiotic matrices should be sampled since the samples would give a better idea of contaminants pathways, fate and effects at the different sites.

Section 5.3.1.2, Screening Levels:

Surface Water: EPA Freshwater Surface Water Screening levels are not applicable for any of the sites since all (including SWMU 7 down stream) are located in estuarine wetlands that can have a variable salinity throughout the year. The EPA R4 2000 memorandum has some ecological screening values for salt water. These screening values, or EPA's Chronic Marine Ambient Water Quality Standards, or Puerto Rico Environmental Quality Board's Coastal and Estuarine Water Quality Standards, should be considered as more appropriate screening levels.

Sediment: Screening Criteria should include Sediment Quality Guidelines from NOAA's National Status and Trends Program, or any other more stringent screening criteria. The EPA R4 2000 memorandum has some ecological screening values for sediment, we

recommend they be considered in evaluating the sediment samples to be taken.

Soils: The ecological screening values for soil were taken from the study entitled, "Ecological Screening Values for Surface Water, Sediment and Soil prepared for the Savannah River Site" (Friday, 1998). We suggest using the criteria for sediments and water as well.

We recommend that the Navy consider convening all the stakeholders including Puerto Rico's Environmental Quality Board and Puerto Rico's Department of Natural and Environmental Resources to discuss these and any other issues that may arise. The Service looks forward to a close working relationship with the Navy to assure that the fish and wildlife resources of Vieques Island and Vieques National Wildlife Refuge are not adversely impacted by environmental contaminants.

Thank you for the opportunity to comment on this document, if you have any questions, please contact Felix Lopez of my staff at 787 851-7297 x 26.

Sincerely,

James P. Oland
Field Supervisor

Enclosure

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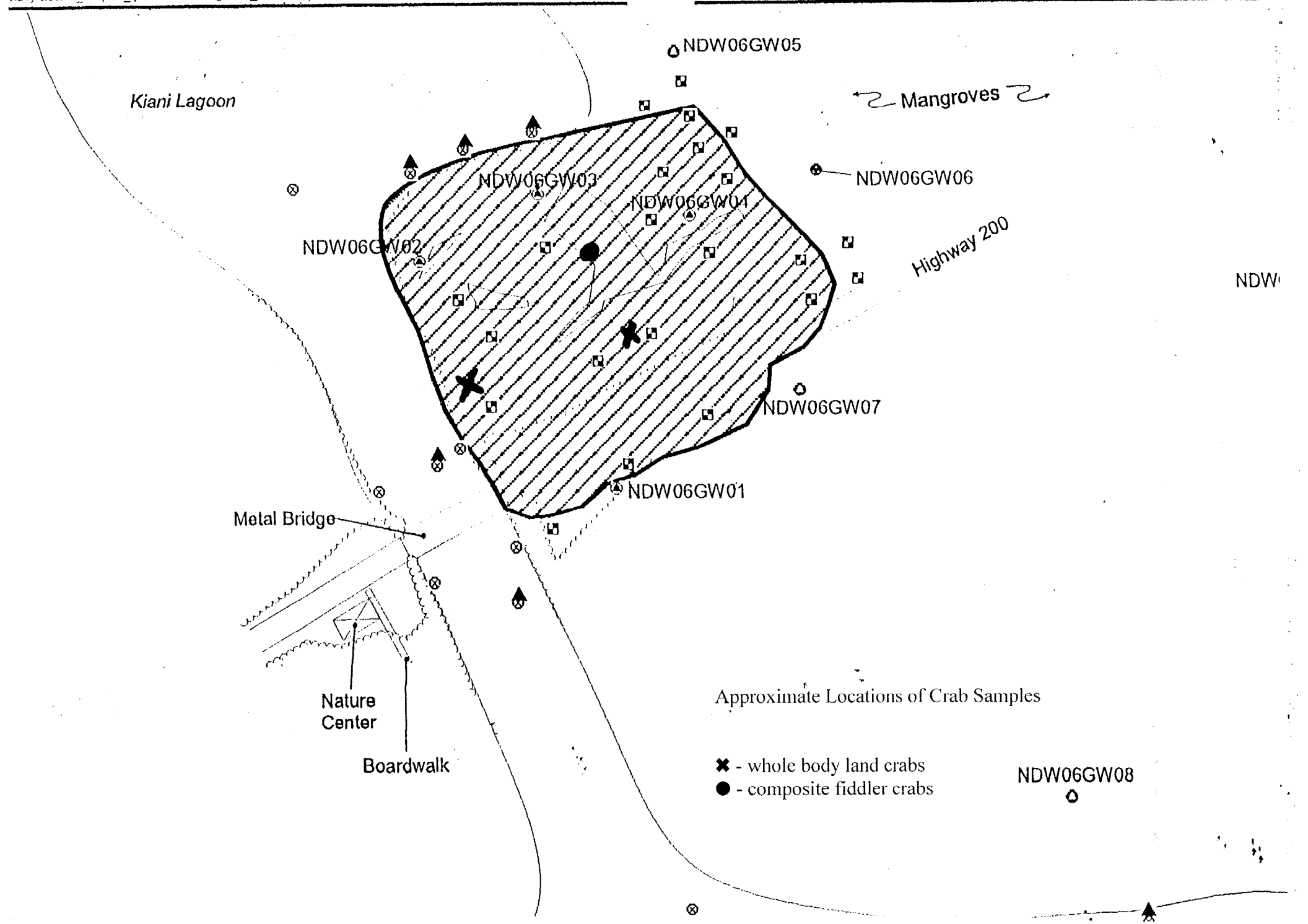
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Kiani Lagoon
Mangroves
NDW06GW06
NDW06GW03
NDW06GW01
NDW06GW02
Highway 200
NDW06GW07
NDW06GW01
Metal Bridge
Nature Center
Boardwalk
Approximate Locations of Crab Samples
✖ - whole body land crabs
● - composite fiddler crabs
NDW06GW08